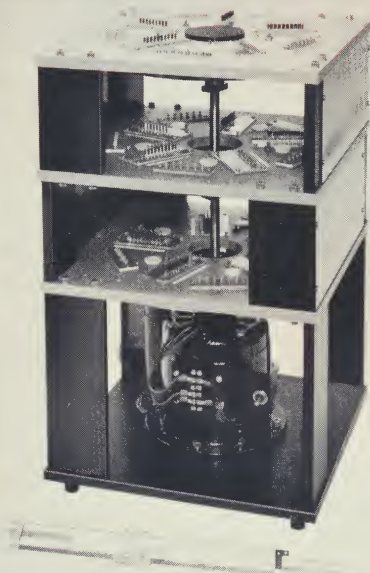




## LIBRASCOPE engineering data



MODEL L-323

# random- access disc memory

**DESCRIPTION**—Librascope random-access disc memories can be used to provide data storage and transfer in a wide variety of computer systems and peripheral equipment or wherever rapid-access memory is a system requirement. They feature a flying head per track and a nonwearing, plated cobalt recording surface, providing superlative magnetic performance under all conditions of operation. The Model L-323 magnetic storage discs are stacked in a compact assembly of three and have a maximum capacity of 1,000,000 bits and are available with an average access time of either 17 or 25 milliseconds.

**SPECIAL FEATURES** — The superior but simplified disc and head design results in more efficient packaging than has previously been available and in a lower-cost product. The recording disc surfaces, plated with a cobalt coating, are smooth and long-wearing, unaffected by multiple start-and-stop operations. The flying head is in contact with the metallic recording surface when the disc is not rotating. The inherent hardness of the cobalt plating provides high resistance to abrasive wear and relative insensitivity to accidental damage.

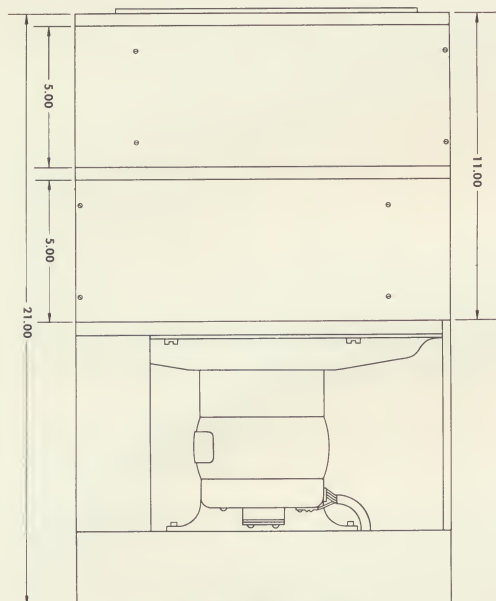
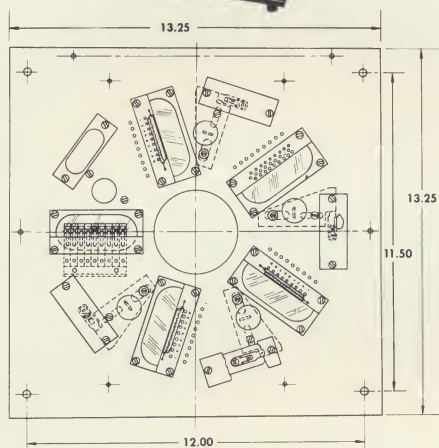
All materials, fits, and design proportions of the basic structure are selected to compensate for the temperature differentials the disc assemblies may encounter in storage and in operation. For strength, rigidity, and lightness of weight, all discs and supporting structures are made of aluminum.

**APPLICATIONS**—Random-access disc memories are used in computer systems and peripheral equipment as the main storage or buffer storage, or they supplement other memory. In a typical computer system, the magnetic disc memory provides an inexpensive, rapid-access, reliable storage with sufficient capacity for many programs. In peripheral equipment, such as visual computer displays, they make possible a constant (no-flicker) variable-size display.



MODEL L-323

# random- access disc memory



MEMORY UNIT ASSEMBLY

## GENERAL CHARACTERISTICS

Power requirements	115-volt, 60-cycle, single-phase AC
Disc diameter	10 in.
Weight	60 lb.
Axis of rotation	Vert., horiz., or any combination
Recording diameters	4.7 in. to 9.2 in.
Number of tracks	135 (15 groups of 9)
Number of registers	12
Register length	0.25 or 0.5 in.
Register adjustment	$\pm 0.018$ in.
Bits per track (max.)	6800 pm recording
Track width	0.034 in.
Tracks per inch	20
Capacity (total)	1,000,000 bits
Packing density (max.)	400 bits/in. at 4.7 in. dia.
Rotational speed	1200 or 1800 rpm
Frequency (repetition rate)	204kc (max.)
Recording surface	Proprietary plated cobalt
Head spacing	Flying head
Head inductance (typical)	1 mh/half coil
Write current (typical)	28 ma
Readback voltage (typical)	
1200 rpm	180 mv (min.), inner track
	340 mv (max.), outer track
Bearing life (average)	10 years

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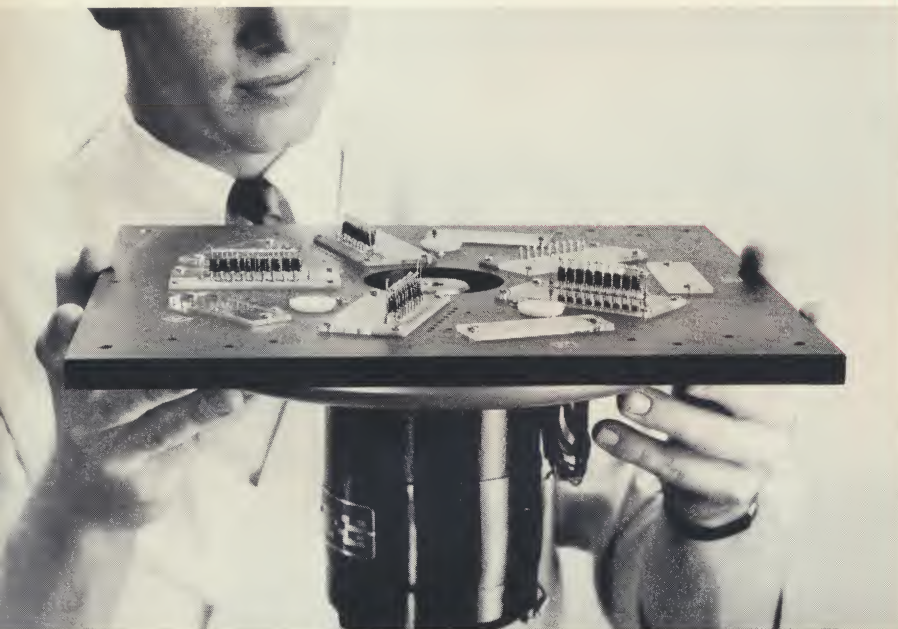
COMMERCIAL COMPUTER DIVISION

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## LIBRASCOPE engineering data



SERIES L-300

# random- access disc memory

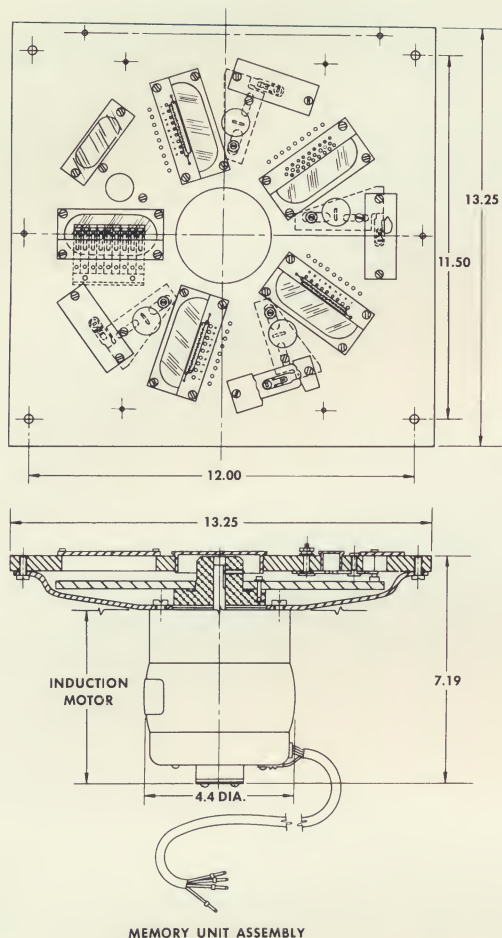
**DESCRIPTION**—Librascope random-access disc memories can be used to provide data storage and transfer in a wide variety of computer systems and peripheral equipment or wherever rapid-access memory is a system requirement. They feature a flying head per track and a nonwearing, plated cobalt recording surface, providing superlative magnetic performance under all conditions of operation. The Series L-300 magnetic storage discs have a maximum capacity of 275,000 bits and are available with an average access time of either 17 or 25 milliseconds.

**SPECIAL FEATURES**—The superior but simplified disc and head design results in more efficient packaging than has previously been available and in a lower-cost product. The recording disc surface, plated with a cobalt coating, is smooth and long-wearing, unaffected by multiple start-and-stop operations. The flying head is in contact with the metallic recording surface when the disc is not rotating. The inherent hardness of the cobalt plating provides high resistance to abrasive wear and relative insensitivity to accidental damage.

All materials, fits, and design proportions of the basic structure are selected to compensate for the temperature differentials the disc assemblies may encounter in storage and in operation. For strength, rigidity, and lightness of weight, all discs and supporting structures are made of aluminum.

**APPLICATIONS**—Random-access disc memories are used in computer systems and peripheral equipment as the main storage or buffer storage or they supplement other memory. In a typical computer system, the magnetic disc memory provides an inexpensive, rapid-access, reliable storage with sufficient capacity for many programs. In peripheral equipment such as visual computer displays, they make possible a constant (no-flicker) variable-size display.



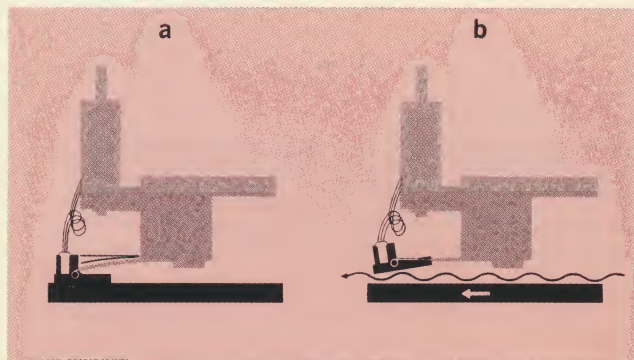


## SERIES L-300

# random- access disc memory

## GENERAL CHARACTERISTICS

Power requirements	115-volt, 60-cycle, single-phase AC
Disc diameter	10 in.
Weight	25 lb.
Axis of rotation	Vert., horiz., or any combination
Recording diameters	4.7 in. to 9.2 in.
Number of tracks	45 (5 groups of 9)
Number of registers	4
Register length	0.25 or 0.5 in.
Register adjustment	$\pm 0.018$ in.
Bits per track (max.)	6144 pm recording
Track width	0.034 in.
Tracks per inch	20
Capacity (total)	276,480 bits
Packing density (max.)	400 bits/in. at 4.7 in. dia.
Rotational speed	1200 or 1800 rpm
Frequency (repetition rate)	184kc (max.)
Recording surface	Proprietary plated cobalt
Head spacing	Flying head
Head inductance (typical)	1 mh/half coil
Write current (typical)	28 ma
Readback voltage (typical)	1200 rpm 180 mv (min.), inner track 340 mv (max.), outer track
Bearing life (average)	10 years



## OPERATION

When a disc is not rotating (a), the heads are held in contact with the metallic recording surface by a reed of bifurcated leaf springs whose tension, for each individual head, can be adjusted by clamping/adjusting screws. In the contact position, the low-friction surface prevents the heads from damaging the disc tracks.

When the disc rotates (b), the heads "fly" over the track, riding on an air cushion approximately 0.0001-inch thick. The design of the heads and their adjustable mountings is such that the head-to-disc gap remains constant during operation; the flying action of the heads automatically compensates for inherent variations in the run-out of the disc and for any unbalanced temperature differentials between the head mounting plate and recording surface of the disc.

Track access is controlled by addressing from electronic switching circuits, control logic circuits, and buffers that are wired to the heads.

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